

Torque Converter Flex Lock-up Shudder

Service Category Drivetrain

Section Automatic Transmission/Transaxle

Market USA

Toyota Supports
 ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2013 – 2014	RAV4	Drive Type(s): 4WD, 2WD VDS(s): BF4EV, BFREV, DF4EV, DFREV, RF4EV, RFREV, WF4EV, WFREV, YF4EV, YFREV, ZF4EV, ZFREV

Introduction

Some 2013 – 2014 model year RAV4 vehicles may exhibit a brief shudder intermittently while driving under light loads between approximately 25 and 50 mph. The torque converter and Engine Control Module/ECM (SAE term: Powertrain Control Module/PCM) logic have been modified to reduce the possibility of this condition occurring. Please follow the Repair Procedure below to address this condition.

Warranty Information

OP CODE	DESCRIPTION	DRIVE-TRAIN	TIME	OFF	T1	T2
TC1502	R & R Torque Converter Clutch and Reprogram ECM (PCM) Engine	2WD	6.7	32000-73011 32000-06050	9B	50
TC1503		AWD	7.3			

APPLICABLE WARRANTY

- This repair is covered under the Toyota Powertrain Warranty. This warranty is in effect for 60 months or 60,000 miles, whichever occurs first, from the vehicle's in-service date.
- Warranty application is limited to occurrence of the specified condition described in this bulletin.

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Parts Information

PLANT	DRIVETRAIN	PART NUMBER		PART NAME	QTY
		PREVIOUS	NEW		
TMMC	2WD	89661-0R070 89661-0R380 89661-0R381	89661-0R382	Computer, Engine Control (ECM/PCM)	-
	AWD	89661-0R080 89661-0R390 89661-0R391	89661-0R392		-
Shokki	2WD	89661-42K50 89661-42U30 89661-42U31	89661-42U32		-
	AWD	89661-42K60 89661-42U40 89661-42U41	89661-42U42		-

PART NUMBER		PART NAME	QTY
PREVIOUS	NEW		
32000-73011 32000-06050	04004-48106	Converter Assy Kit, Torque	1
00289-ATFWS		ATF WS	5.4 U.S. qts. (5.1 liters)
90521-78004 (2WD) 90521-75002 (AWD)		Ring, Hole Snap (for Drive Shaft Bearing Bracket)	2
90119-10461		Bolt (for Drive Shaft Bearing Bracket Setting No. 1)	2
90080-17238		Nut (for Front Axle Shaft)	2
90468-14016		Clip	1
17451-0D150		Gasket, Exhaust Pipe, No. 1	1
90917-A6002 (TMMC Vehicles Only)		Gasket, Exhaust Pipe	1
90917-06078 (Shokki Vehicles Only)		Gasket, Exhaust Pipe, No. 2	1
00451-00001-LBL		Authorized Modification Labels	1

NOTE

- The ECM (PCM) should NOT be replaced as part of the Repair Procedure.
- Authorized Modification Labels may be ordered in packages of 25 from the Materials Distribution Center (MDC) through *Dealer Daily – Dealer Support Materials Orders*.

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Required Tools & Equipment

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
Techstream 2.0*	ADE	TS2UNIT	1
Techstream Lite		TSLITEPDLR01	

NOTE

- Only ONE of the Techstream units listed above is required.
- Software version 10.00.029 or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.
- The Diagnostic Tester is NOT recommended for flash reprogramming. Please use Techstream or an approved J2534 interface to perform flash reprogramming updates. Visit techinfo.toyota.com for more information regarding J2534 reprogramming.



SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
GR8 Battery Diagnostic Station*	00002-MCGR8	1
Transmission Fill System*	00002-11100-02	1
Crankshaft Pulley Holding Tool*	09213-54015-01	1
Companion Flange Holding Tool*	09330-00021	1
Engine Support Bar*	00002-ESUPPT-01	1

NOTE

Additional SSTs may be ordered by calling 1-800-933-8335.

REQUIRED PARTS FOR ENGINE SUPPORT BAR**	PART NUMBER	QTY
No. 1 Engine Hanger	12281-36020	1
No. 2 Engine Hanger	12282-36021	1
Bolt	91552-81025 91552-81040	1

* Essential SST.

** These items are to be used with the Engine Support Bar (SST P/N 00002-ESUPPT-01), and must be ordered through NAPO.

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Required Tools & Equipment (Continued)

REQUIRED MATERIAL	QUANTITY
Toyota Genuine Adhesive 1324, Three Bond 1324, or Equivalent	As Needed
Toyota Genuine Differential Gear Oil LT API GL-5, SAE 75W-85 (AWD <u>only</u>)	0.43 – 0.52 qts. (0.40 – 0.50 liters, 0.36 – 0.44 Imp. qts)

Calibration Information

MODEL	DRIVETRAIN	ENGINE	CALIBRATION ID	
			PREVIOUS	NEW
RAV4	2WD	Main	342B5000 342N5000 342N5100	342N5200 / 54204200
		Sub	54204000 54204100	
	AWD	Main	342G3000 342N6000 342N6100	342N6200 / 54205200
		Sub	54205000 54205100	

Repair Procedure

1. With the vehicle at operating temperature, confirm the condition described in the Introduction.

Is there a brief shudder intermittently present while driving under a light load between 25 – 50 mph? Typically, the condition will be most noticeable prior to an upshift.

- **YES** — Continue to step 2.
- **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

NOTICE

Be sure to follow the procedure below in the order provided to prevent contamination of previously cleaned parts.

2. Drain the ATF from the transaxle by removing the drain plug.

Refer to the Technical Information System (TIS), applicable model and model year Repair Manual:

- 2013 – 2014 RAV4:
Drivetrain – Automatic Transmission/Transaxle – “[U760E](#) / [U760F](#) Automatic Transmission/Transaxle: Automatic Transaxle Fluid: Replacement”

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Repair Procedure (Continued)

- Remove and replace the torque converter.

Refer to TIS, applicable model and model year Repair Manual:

- 2013 – 2014 RAV4:
Drivetrain – Automatic Transmission/Transaxle – “[U760E](#) / [U760F](#) Automatic Transmission/Transaxle: Automatic Transaxle Assembly: Removal”

- With the transaxle installed in the vehicle, remove the transaxle oil pan.

Refer to TIS, applicable model and model year Repair Manual:

- 2013 – 2014 RAV4:
Drivetrain – Automatic Transmission/Transaxle – “[U760E](#) / [U760F](#) Automatic Transmission/Transaxle: Valve Body Assembly: Removal”

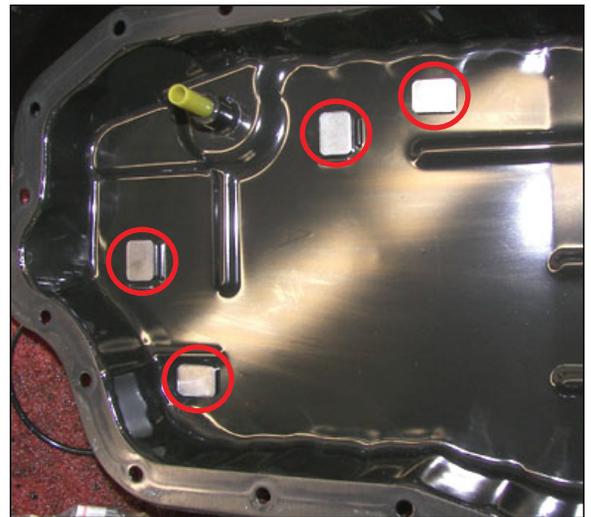
- Remove and discard the 2 oil pan magnets and clean the inside of the oil pan by wiping it off with a clean cloth only.

NOTICE

Do NOT use any chemical cleaners to clean the inside of the oil pan.

- Install 4 NEW magnets in the locations shown in Figure 1.

Figure 1. Magnet Installation Locations



- Reinstall the oil pan using a NEW oil pan gasket.

Refer to TIS, applicable model and model year Repair Manual:

- 2013 – 2014 RAV4:
Drivetrain – Automatic Transmission/Transaxle – “[U760E](#) / [U760F](#) Automatic Transmission/Transaxle: Valve Body Assembly: Installation”

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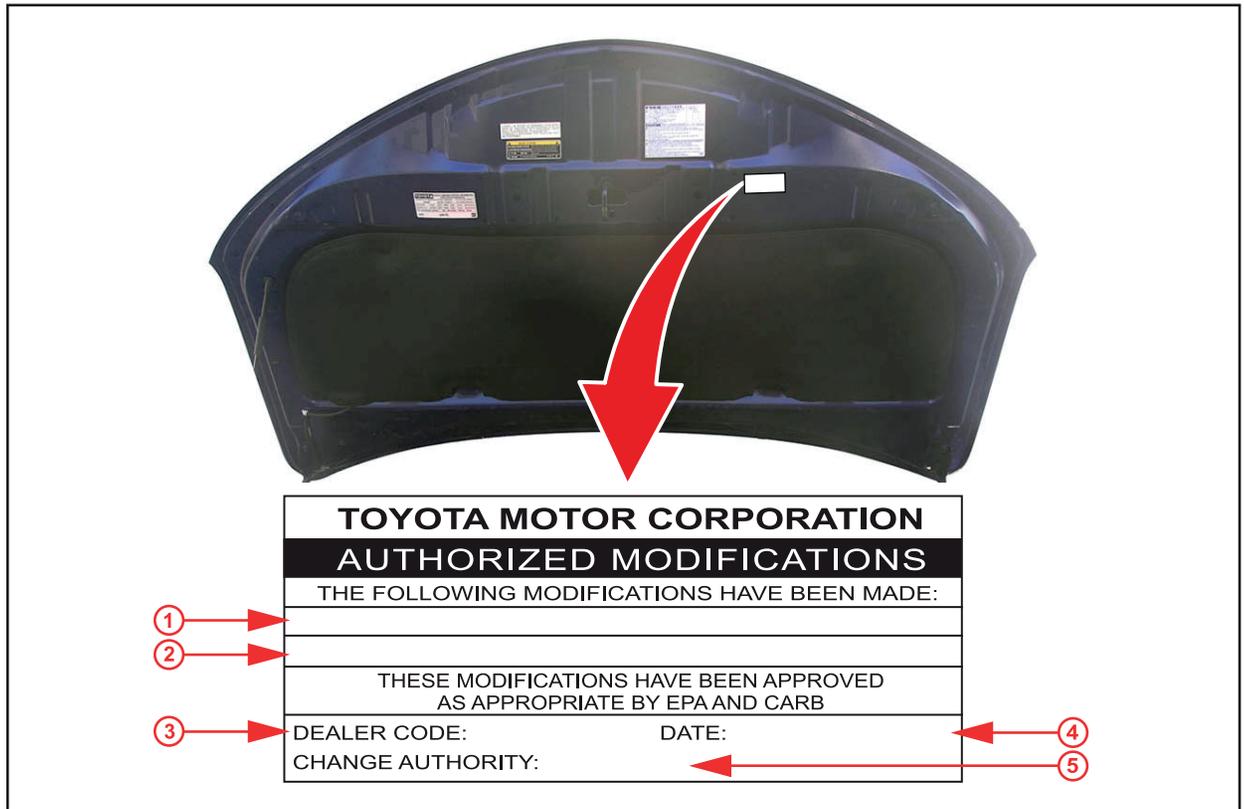
Repair Procedure (Continued)

8. Reinstall the drain plug using a NEW drain plug gasket and refill the transaxle with ATF.

Refer to TIS, applicable model and model year Repair Manual:

- 2013 – 2014 RAV4:
Drivetrain – Automatic Transmission/Transaxle – “[U760E](#) / [U760F](#) Automatic Transmission/Transaxle: Automatic Transaxle Fluid: Replacement”
9. Check for the Authorized Modifications Label affixed to the vehicle in the location shown in Figure 2 below. Confirm if the ECM (PCM) calibration has been updated. If the calibration ID listed is NOT the latest ECM (PCM) calibration — go to step 10. If the calibration ID is the latest, go to step 12.

Figure 2. Location of Authorized Modifications Label on 2013 – 2014 RAV4



1	Replacement ECM (PCM) Part Number (i.e., 89661-0R382)
2	New Calibration ID(s) (i.e., 342N5200 / 54204200)
3	Dealer Code

4	Date Completed
5	This SB Number

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Repair Procedure (Continued)

10. Flash reprogram the ECM (PCM).

NOTE

- The GR8 Battery Diagnostic Station **MUST** be used in Power Supply Mode to maintain battery voltage at 13.5 volts while flash reprogramming the vehicle.
- For details on how to use the GR8 Battery Diagnostic Station, refer to the [GR8 Instruction Manual](#) located on the Technical Information System (TIS), *Diagnostics – Tools & Equipment – Battery Diagnostics*.

Follow the procedures outlined in Service Bulletin No. [T-SB-0012-13](#), “Techstream ECU Flash Reprogramming Procedure,” and flash the ECM (PCM) with the NEW calibration file update.

11. Install the Authorized Modifications Label.
 - A. Using a permanent marker, enter the following information on the label:
 - ECM part number [Refer to the **Parts Information** section for the **NEW PART NUMBER**]
 - Calibration ID(s) [Refer to the **Calibration Information** section for the **NEW CALIBRATION ID**]
 - Dealer Code
 - Repair Date
 - Change Authority [**This bulletin number**]
 - B. Affix the Authorized Modifications Label to the vehicle at the location shown in Figure 2. The Authorized Modifications Label is available through the MDC, P/N 00451-00001-LBL.
12. Perform the Techstream ECT Reset Memory Utility and test drive to confirm the repair.